GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(510) 352-4800

January 6, 1992

County of Alameda
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Reference: Former Shell Service Station
461 Eighth Street
Oakland, California 94607
WIC 204-5508-6200

Gentlemen:

As requested by Mr. Paul Hayes of Shell Oil Company, we are forwarding a copy of the Site Update Report dated January 6, 1992. The enclosed report presents the results of the fourth quarter 1991 ground-water sampling at the above referenced location.

Do not hesitate to call should you have any questions or comments.

Sincerely,

Ellen Fostersmith

Ellen Fostersmith
Geologist

enclosure

cc: Mr. Paul Hayes, Shell Oil Company
Mr. Tom Callaghan, Regional Water Quality Control Board

GeoStrategies Inc.

SITE UPDATE

Former Shell Service Station
461 Eighth Street
Oakland, California
WIC 204-5508-6200

764401-12

January 6, 1992

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(510) 352-4800

January 6, 1992

Shell Oil Company
P.O. Box 5278
Concord, California 94520

Attn: Mr. Paul Hayes

Re: SITE UPDATE
Former Shell Service Station
461 Eighth Street
Oakland, California

Gentlemen:

This Site Update has been prepared by GeoStrategies Inc. (GSI) and presents the results of the 1991 fourth quarter ground-water sampling performed by Gettler-Ryan Inc. (G-R) for the above referenced site (Plate 1). The scope of work presented in this document was performed at the request of Shell Oil Company. Field work and laboratory analysis methods were performed to comply with current State of California Water Resources Control Board guidelines.

SITE BACKGROUND

There are currently three monitoring wells in the site vicinity; Wells S-4 through S-6 (Plate 2). Seven ground-water monitoring wells (S-1 through S-7) were installed in 1981 by Groundwater Technology, Inc. (GTI). In 1982, GTI installed a ground-water recovery system in Well S-1. The recovery system was subsequently turned off in August 1982. Wells S-1 through S-3, and S-7 were destroyed in 1987. Wells S-4 through S-6 are off-site. These wells were installed to evaluate the vertical and horizontal extent of petroleum hydrocarbons in soils and shallow groundwater beneath and downgradient of the site.

Quarterly monitoring and sampling of wells began in 1988. Ground-water samples have been analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline) according to EPA Method 8015 (Modified) and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) according to EPA Method 8020.

CURRENT QUARTERLY SAMPLING RESULTS

Potentiometric Data

Prior to ground-water sampling, depth to water-level measurements were obtained in each monitoring well using an electronic oil-water interface probe. Static ground-water levels were measured from the surveyed top of well box and recorded to the nearest ± 0.01 foot. Corresponding elevations, referenced to project site datum are presented in Table 1. Water-level data were used to construct the water level elevation map on Plate 3. However, because insufficient water was present in Well S-4 to confirm a reliable water level, no gradient was calculated this quarter from the remaining two wells.

Floating Product Measurements

Each well was checked for the presence of floating product using an electronic oil-water interface probe. A clear acrylic bailer was used to confirm probe results. Floating product was observed in Well S-5 at 0.25 feet in measured thickness.

Ground-water Analytical Data

Ground-water samples were collected on November 7, 1991. The samples were analyzed for TPH-Gasoline according to EPA Method 8015 (Modified) and BTEX according to EPA Method 8020 by International Technology (IT), a State of California certified laboratory located in San Jose, California.

TPH-Gasoline and benzene were detected in Well S-6 at concentrations of 39. and 11. parts per million (ppm), respectively. Well S-4 was not sampled due to insufficient water in the casing. These data are summarized in Table 2 and included in Appendix A. A chemical concentration map for TPH-Gasoline and benzene is presented on Plate 4. Historical chemical analytical data are presented in Table 3.

Quality Control

The quality control (QC) sample for this quarter's sampling was a trip blank. This sample was prepared in the laboratory using organic-free water to evaluate laboratory handling procedures of samples. The results of QC sample analyses are presented in Table 2.

If you have any questions, please call.

GeoStrategies Inc. by,

Robert Lauritzen

Stephen J. Carter
Project Manager

John F. Vargas

John F. Vargas
Senior Geologist
C.E.G. 5046

REGISTERED GEOLOGIST
JOHN F. VARGAS
NO. 5046
STATE OF CALIFORNIA

SJC/JFV/dls

Plate 1. Vicinity Map
Plate 2. Site Plan
Plate 3. Water-Level Elevation Map
Plate 4. TPH-G/Benzene Concentration Map

Appendix A: Analytical Laboratory Report and Chain-of-Custody

QC Review: RAL

764401-12

TABLE 1

FIELD MONITORING DATA

WELL NO.	MONITORING DATE	CASING DIA. (IN)	TOTAL WELL DEPTH (FT)	WELL ELEV. (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS (FT)	STATIC WATER ELEV. (FT)	PURGED WELL VOLUMES	pH	TEMPERATURE (F)	CONDUCTIVITY (uMHOS/cm)
S-4	07-Nov-91	4	16.3	93.51	15.60	----	77.91	----	----	----	----
S-5	07-Nov-91	4	21.48	99.36	21.33	0.25	78.23	----	----	----	----
S-6	07-Nov-91	4	38.4	100.58	22.35	----	78.23	5	6.96	68.7	722

Notes:
1. Static water elevations referenced to Mean Sea Level (MSL).
2. Physical parameter measurements represent stabilized values.
3. Static water levels corrected for floating product (conversion factor = 0.80).
4. Well S-4 not sampled due to insufficient water in casing.

TABLE 2

GROUND-WATER ANALYSIS DATA

WELL NO	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
S-6	07-Nov-91	12-Nov-91	39.	11.	2.0	0.76	2.3
TB	----	12-Nov-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

CURRENT REGIONAL WATER QUALITY CONTROL BOARD MAXIMUM CONTAMINANT LEVELS
Benzene 0.001 ppm Xylenes 1.750 ppm Ethylbenzene 0.680 ppm

CURRENT DHS ACTION LEVELS
Toluene 0.1000 ppm

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline TB = Trip Blank
PPM = Parts Per Million

Note: 1. All data shown as <x are reported as ND (none detected).
2. DHS Action Levels and MCLs are subject to change pending State review.

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
16-Apr-87	S-2	47.	8.2	4.7	----	3.1
26-Oct-88	S-4	0.13	0.0038	0.013	0.004	0.03
15-Feb-89	S-4	<0.05	0.0005	<0.001	<0.001	0.003
30-Apr-90	S-4	<0.050	<0.0005	<0.0005	<0.0005	<0.001
27-Jun-91	S-4	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
16-Apr-87	S-5	130.	15.	16.	----	14.
26-Oct-88	S-5	110.	20.	25.	2.3	10.
15-Feb-89	S-5	94.	16.	21.	1.8	10.
02-May-89	S-5	120.	29.	35.	3.1	15.
27-Jul-89	S-5	110.	20.	29.	2.4	14.
30-Apr-90	S-5	100.	13.	22.	2.1	11.
31-Jul-90	S-5	53.	8.3	14.	1.2	7.4
16-Apr-87	S-6	81.	16.	9.	----	6.4
26-Oct-88	S-6	110.	29.	18.	2.5	8.2
15-Feb-89	S-6	54.	18.	4.5	1.4	4.
02-May-89	S-6	93.	43.	9.9	3.	8.
27-Jul-89	S-6	52.	20.	3.2	1.7	5.5
05-Oct-89	S-6	55.	20.	2.9	1.6	5.5
09-Jan-90	S-6	76.	35.	9.1	2.3	8.6
30-Apr-90	S-6	39.	13.	2.3	0.9	2.8
31-Jul-90	S-6	48.	20.	4.6	1.5	4.9
30-Oct-90	S-6	27.	7.4	0.9	0.6	1.4
06-Mar-91	S-6	35.	3.9	2.7	2.3	3.5
27-Jun-91	S-6	51.	19.	5.6	1.7	6.3
24-Sep-91	S-6	42.	14.	4.3	1.2	4.0
07-Nov-91	S-6	39.	11.	2.0	0.8	2.3

TABLE 3

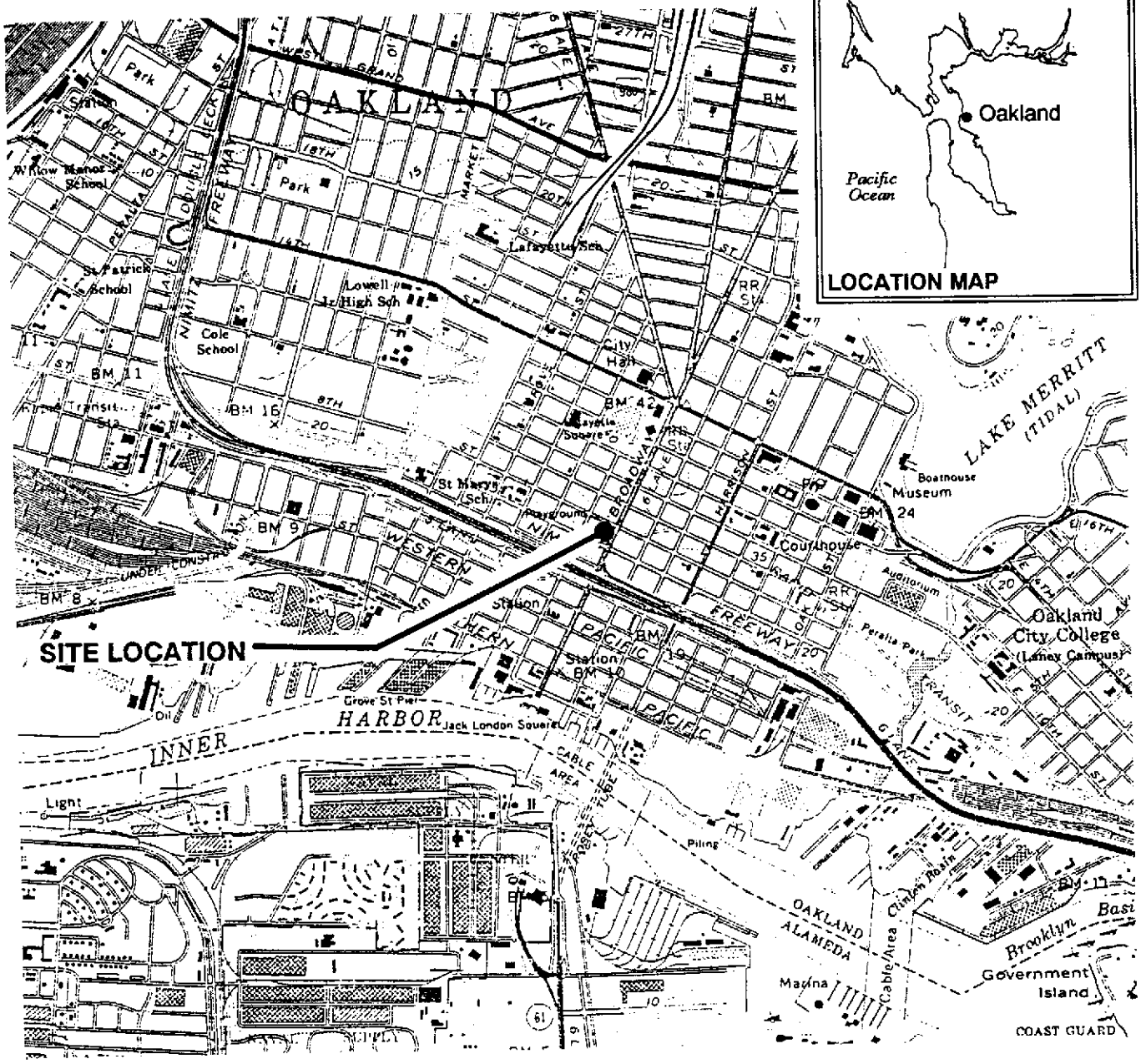
HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)

Current Regional Water Quality Control Board Maximum Contaminant Levels
Benzene 0.001 ppm Xylenes 1.750 ppm Ethylbenzene 0.680 ppm

Current DHS Action Levels Toluene 0.1000 ppm

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPM = Parts Per Million
NOTE: 1. DHS Action levels and MCL's are subject to change pending State of California review.
2. Ethylbenzenes and Xylenes were combined prior to May 1987.
3. All data shown as <X are reported as ND (none detected).



Base Map: USGS Topographic Map

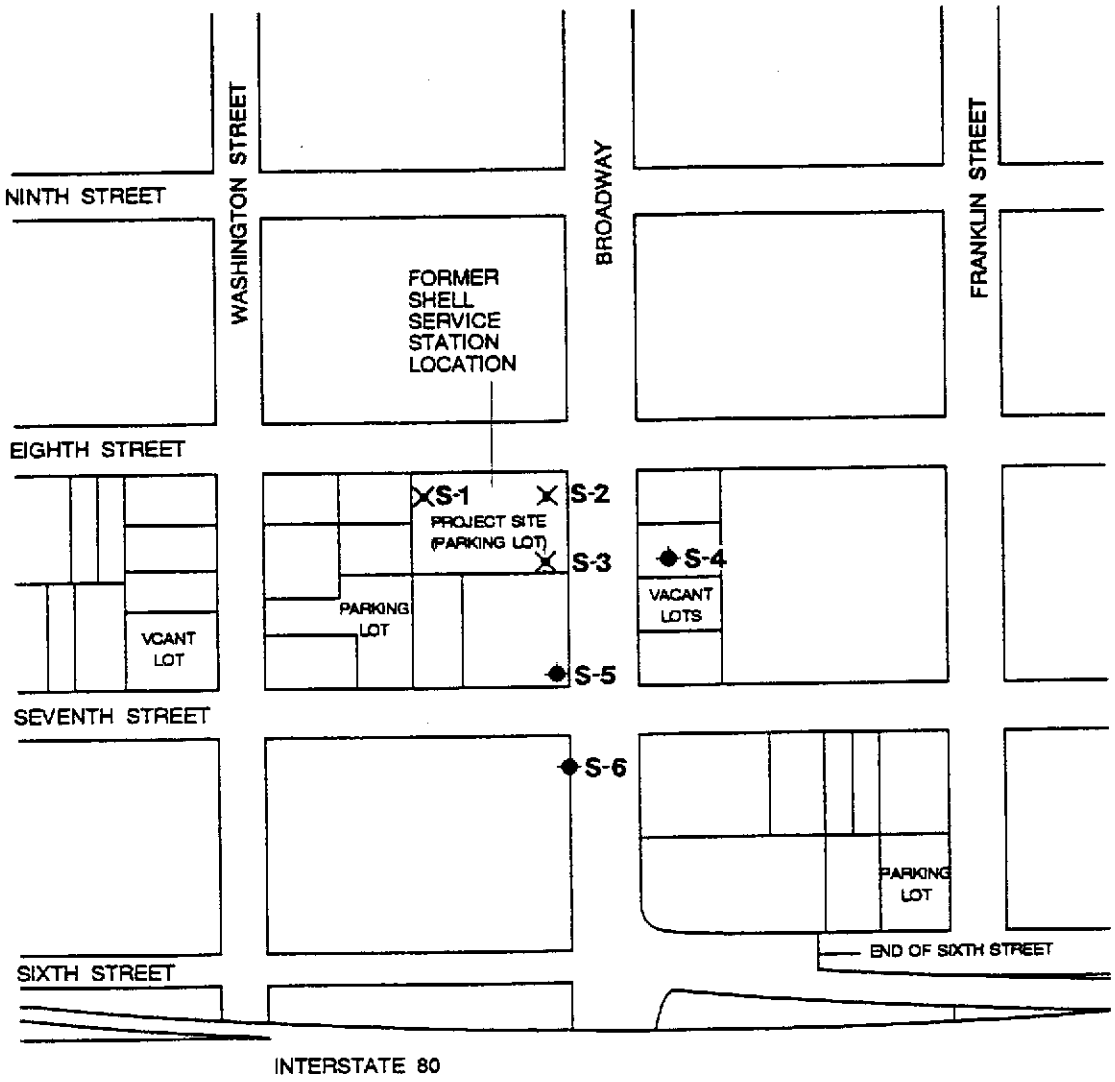
Approximate Scale : 1" = 2000'

GeoStrategies Inc.

Vicinity Map
Former Shell Service Station
461 Eighth Street
Oakland, California

PLATE **1**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
7644		5/90		



EXPLANATION

S-1 Ground-water monitoring well location

X Destroyed well

N

0 200 400

Scale in Feet

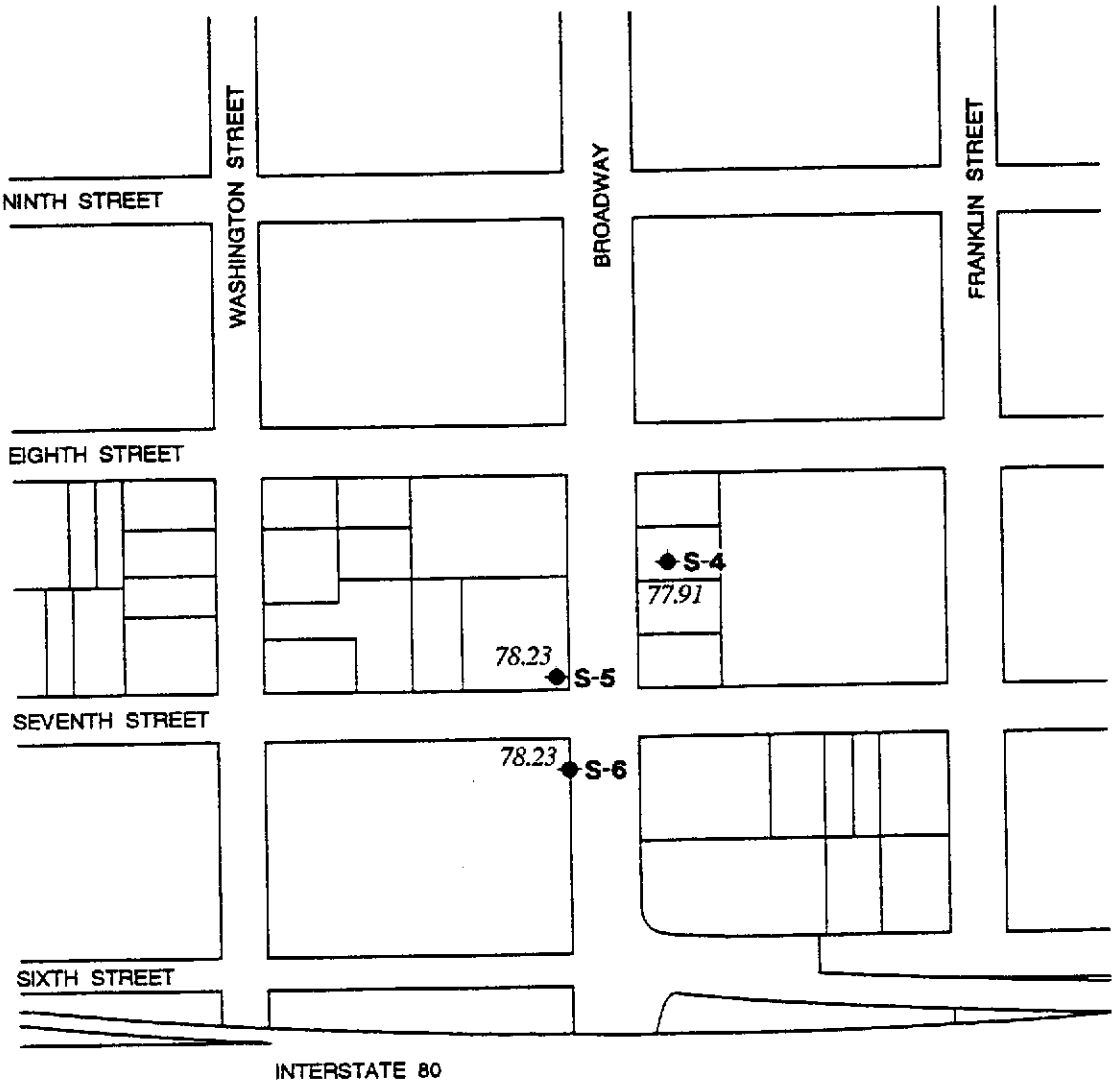
Note: **Well S-7 located at Washington and Fifth Streets was destroyed in 1987**

GeoStrategies Inc.

Site Plan
Former Shell Service Station
461 Eighth Street
Oakland, California

PLATE **2**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
764401-12	CPS	1/92		



EXPLANATION

◆ S-1 Ground-water monitoring well location

Approximate Gradient = Not Calculated

78.23 Ground-water elevation in feet referenced to project datum measured on November 7, 1991

Note: 1) Insufficient water in Well S-4 to confirm reliable water level.

N

0 200 400

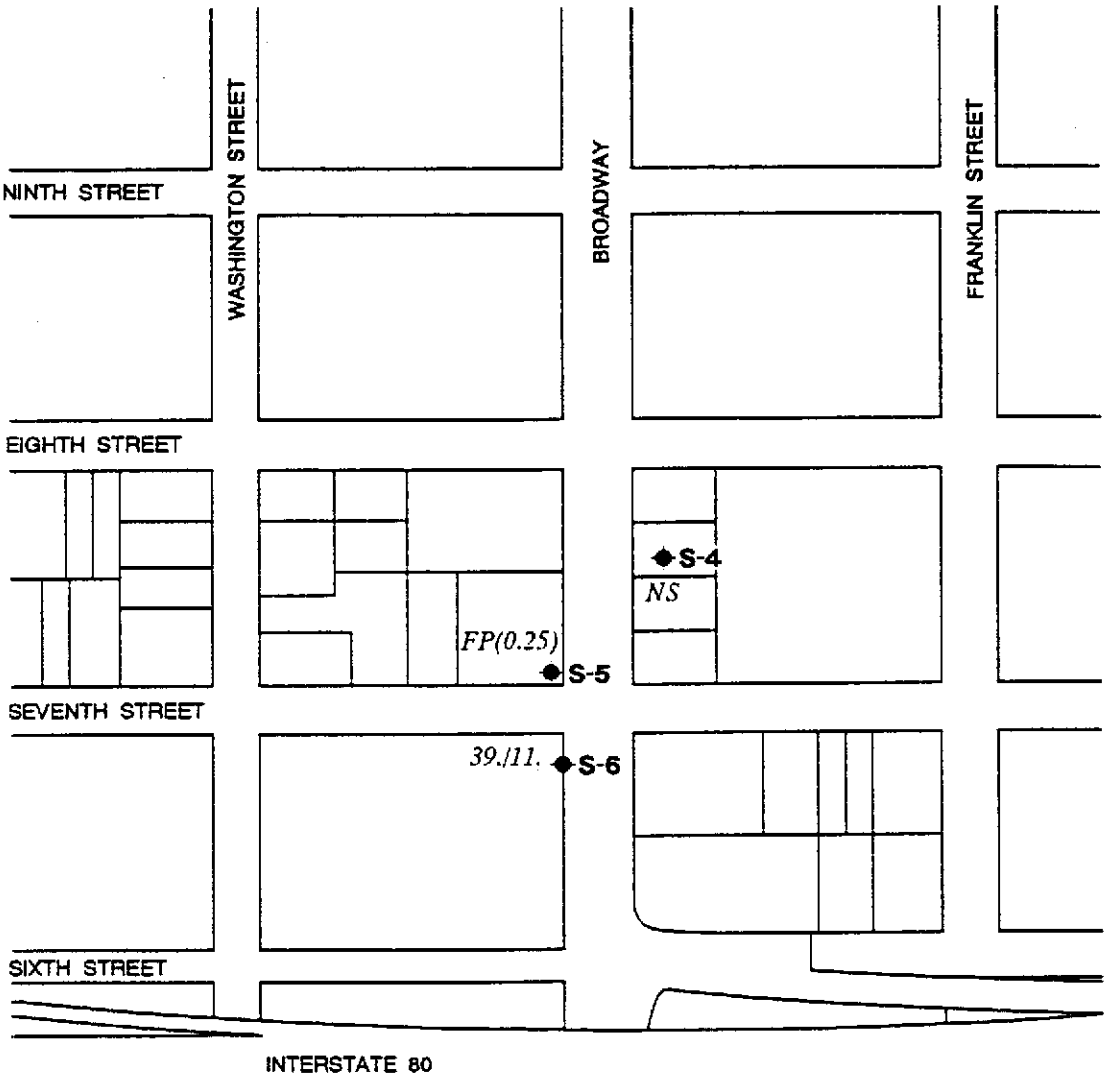
Scale in Feet

GeoStrategies Inc.

Water-Level Elevation Map
Former Shell Service Station
461 Eighth Street
Oakland, California

PLATE **3**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
764401-12	RCS	1/92		



EXPLANATION

◆ S-1	Ground-water monitoring well location
39./11.	TPH-G (Total Petroleum Hydrocarbons calculated as Gasoline)/Benzene concentrations in ppm sampled on November 7, 1991
FP(0.25)	Floating Product (measured thickness in feet)
NS	Not sampled due to insufficient water

N

0 200 400

Scale in Feet

GeoStrategies Inc.

TPH-G/Benzene Concentration Map
Former Shell Service Station
461 Eighth Street
Oakland, California

PLATE **4**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
764401-12	EPS	1/92		

APPENDIX A
ANALYTICAL LABORATORY REPORT
AND CHAIN-OF-CUSTODY

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Shell Oil Company
Gettler-Ryan
2150 West Winton
Hayward, CA 94545
Tom Paulson

Date: 11/22/91

Work Order: T1-11-082

P.O. Number: MOH 880-021 Vendor #I0002402

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3644 461 8th St, Oakland
Date Received: 11/08/91
Number of Samples: 2
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Richard Jacobs
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/22/91
Client Work ID: GR3644 461 8th St, Oakland

Work Order: T1-11-082

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-6**
SAMPLE DATE: **11/07/91**
LAB SAMPLE ID: **T111082-01**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/12/91
Low Boiling Hydrocarbons	Mod.8015		11/12/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	10.	39.
BTEX		
Benzene	0.1	11.
Toluene	0.1	2.0
Ethylbenzene	0.1	0.76
Xylenes (total)	0.1	2.3

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	95.
1,3-Dichlorobenzene (BTEX)	96.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/22/91
Client Work ID: GR3644 461 8th St, Oakland

Work Order: T1-11-082

TEST NAME: **Spike and Spike Duplicates**

SAMPLE ID: **S-6 MS/MSD**
SAMPLE DATE: **11/07/91**
LAB SAMPLE ID: **T111082-01D**
EXTRACTION DATE:
ANALYSIS DATE: **11/11/91**
ANALYSIS METHOD: **Mod. 8015**

QUALITY CONTROL REPORT

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Analyses

RESULTS in Micrograms per Liter

PARAMETER	Sample Amt	Spike Amt	MS Result	MSD Result	MS %Rec	MSD %Rec	RPD
Gasoline	38732.	100000.	118920.	125040.	80.2	86.3	7.3

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	99.	101.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/22/91
Client Work ID: GR3644 461 8th St, Oakland

Work Order: T1-11-082

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **TRIP BLANK**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T111082-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/12/91
Low Boiling Hydrocarbons	Mod.8015		11/12/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	None

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	94.
1,3-Dichlorobenzene (BTEX)	96.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/22/91
Client Work ID: GR3644 461 8th St, Oakland

Work Order: T1-11-082

TEST CODE QC TEST NAME **Quality Control**

Quality control (QC) samples are analyzed and used to assess the laboratory control measures. Routine QC samples include method blanks, spikes and duplicates. The purpose of the method blank (MB) analysis is to demonstrate that artifacts of the test do not yield false positives. The laboratory control spike (LS) and /or matrix spike (MS) analysis is used to evaluate the ability of the test to recover analytes of interest, i.e. accuracy. Accuracy is expressed as percent (%) recovery. The laboratory spike duplicate (LSD), matrix spike duplicate (MSD), or duplicate sample (DUP) is used to determine the precision of the test, by comparing the result from the original spike (or sample) to the duplicate spike (or sample). Precision is expressed as relative percent difference (RPD).

The results of appropriate QC samples from QC batches associated with the listed samples are included in this report.

TEST CODE **TPHVB** TEST NAME **TPH Gas,BTEX by 8015/8020**

The method of analysis for low boiling hydrocarbons is taken from EPA Methods modified 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector in series with a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline. Results in soils are corrected for moisture content and are reported on a dry soil basis unless otherwise noted.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: _____

Date:
Page 1 of 1

Site Address: 7th & Broadway Oakland

WIC#: 204 ~~5510-0204~~ 5508-6200

Shell Engineer: J. Brastad | Phone No. (510) 685-3850 | Fax #: 685-3943

Consultant Name & Address: Gettler-Ryan / GeoStrategies
2150 W. Winton Ave.
Hayward, California 94545

Consultant Contact: Tom Paulson | Phone No. 783-7500 | Fax #: 783-1089

Comments: GR job # 364401

Sampled By:

Printed Name: Randall F. Hedegaard

LAB: IT (SCV) #137

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
Quarterly Monitoring	[X] 5461	24 hours [ ]
Site Investigation	[ ] 5441	48 hours [ ]
Soil for disposal	[ ] 5442	15 days [X] (Normal)
Water for disposal	[ ] 5443	Other [ ] _____
Air Sample- Sys O&M	[ ] 5452	NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.
Water Sample - Sys O&M	[ ] 5453	
Other	[ ]	

Analysis Required

Sample ID	Date	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Container Size	Preservation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-6	11-7-91		X		3	X		✓			40ml	HCl	N	groundwater/gas	Cool
Trip Blank	"		"		1	X		✓			"	"	"	"	✓

Relinquished By (signature): [signature]
Printed name: Randall F. Hedegaard
Date: 11-7-91 Time: 1530
Received (signature): Refrig G-R
Printed name:
Date: 11-7-91 Time: 1630

Relinquished By (signature): Refrig #1-Blank
Printed name:
Date: 11-8-91 Time: 08:00
Received (signature): [signature]
Printed name: Frank Cline
Date: 11-8-91 Time: 08:00

Relinquished By (signature): [signature]
Printed name: Frank Cline
Date: 11-8-91 Time: 10:26
Received (signature): M. LeGrande
Printed name: M. LeGRANDE
Date: 11-8-91 Time: 1026

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Revision Date: 10/15/91